

**APPARATUS AND METHODS FOR NOISE-FEEDBACK CONTROLLED
OPTICAL SYSTEMS**

ABSTRACT OF THE DISCLOSURE

5 Apparatus and methods for noise-feedback controlled optical systems are disclosed.
In one aspect, an apparatus includes a receiver adapted to receive an optical signal and to
convert the optical signal to a corresponding electrical signal, and a control circuit coupled to
the receiver. The control circuit includes a monitoring component adapted to monitor a noise
level of at least a portion of the electrical signal and to adjust a gain of the receiver based on
10 the noise level. In an alternate aspect, an optical system includes a transmitter, a receiver,
and a monitoring component adapted to monitor a noise level of at least a portion of the
electrical signal and to adjust at least one of an amplification of the transmitter and a gain of
the receiver based on the noise level.

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